# AMERICAN VETERINARY REVIEW,

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## ORIGINAL ARTICLES.

### DU CHARBON BACTÉRIEN.

Charbon symptomatique et charbon essentiel de Chabert, par M.M. Arloing, Cornevin et Thomas. Paris, 1883.

REVIEWED BY R. S. HUIDEKOPER, M.D., V.S.

*Symptomatic Anthrax, Quarter Ill, Blackleg, etc.*

Any publication in veterinary medicine is usually welcomed by the public; but it is rare that we have to review a book with so much pleasure as we have had in this accurate and complete practical solution of a disease which our ancestors knew was not anthrax, and yet could only classify with it. It must also flatter the vanity of every veterinary surgeon to see from the hands of his colleagues a biological study which is crowned by the scientific world, and is placed on a par with that of Koch or Pasteur. Two of the authors are comparatively little known, but Mr. Arloing will be recognized as the colaborator of the great Chauveau in the third edition of his Anatomy, and working under such a master, has had advantages which few have the time to obtain. The authors review the diseases described by the classic writers and those of the middle ages, and show that this disease existed then, under the name of anthrax, as geese, fowls and hogs were included among the animals attacked. The first accurate description of the disease is given by Boissier in 1768.

Chabert, in 1782, recognized that the anthracic diseases were different from the septic. In 1850 Davaine, and in 1855 Pollender, saw the bacillus in anthrax, and its absence in blackleg has been one of the reasons for combating their theory of its being the cause. Austrians, Italians, English and Belgians persisted in not accepting two distinct diseases under the term anthrax, and it was only in his addition in 1883 that Williams recognized it in a supplement. The distinguished Roell, of Vienna, soon followed. Absolute statistics of the frequency of blackleg are not obtainable on account of its confusion with anthrax; but it undoubtedly exists in almost all countries.*

*Symptoms.*—Blackleg begins suddenly, but in one of two ways—sometimes by a tumor (essential anthrax), sometimes by a general fever, with all its symptoms and the later appearance of the tumor (symptomatic anthrax). Young cattle (over six months) and more rarely lambs are the animals affected. In one case it was seen in a colt. Fat condition seems to favor the development. Treatment has practically been useless.

*Lesions.*—A gaseous element is always present in the tumors. This gas is almost completely composed of carbonic acid, but potash leaves a small residue. The tissue in the tumor undergoes fatty degeneration. The symptoms of colic are perhaps due to intestinal irritation, as the spleen and liver are free from lesion, although filled with bacteria The biliary vesicle is always filled with microbes. The lungs are engorged at the base, but never hepatized. The blood is *coagulable*, as in its normal condition. The lymphatic glands are congested and almost universally affected.

*Microbes.*—These are found in quantity in the region of the tumor, more or less in the organs, and in the blood are to be found in quantity a few hours preceding death. Here they occur in two forms: *bacteria*, $0.^{mm}_{005}$ to $0.^{mm}_{008}$ long and $0.^{mm}_{001}$ wide, en-

* In vulgar literature, reports of farmers and other non-professional persons to the Department of Agriculture and secular papers, blackleg was separated from anthrax in the United States long before it was either clinically or scientifically in Europe. This was due to the fact that as both blackleg and anthrax are imported diseases, the germs have not come together, but as chance has brought one or the other to this country it has been disseminated accordingly.—R. S. H.

dowed with great mobility; *micrococci*, appearing as refrangent corpuscules $0.^{mm}_{002}$ in diameter. These microbes are readily colored by analine violet.

*Inoculability.*—Experience has demonstrated that blackleg is a "morbus non recidious." Previous experiments in inoculation have failed because—

1st. Animals capable of having the disease were not used in the experiments.

2d. Among the animals apt to have the disease, age diminishes their receptivity.

3d. The matter used was not always taken from virulent parts.

4th. A sufficient dose was not employed.

5th. Inoculation was made in regions little favorable to its evolution.

The rabbit, the hog, carnivora and fowls are only susceptible under peculiar circumstances. Those animals which develop the virus readily are cattle, sheep, goats and the guinea pig. Very young calves (under three to five months) seem protected from moderate doses (six drops of virus), but this immunity ceases as they become herbivorous. Similar immunity is seen in typhoid fever in very young children. Willems noted the same in his early inoculations for contagious pleuro-pneumonia. Animals born and raised in an infected country have again acquired an immunity after about their fourth year, due to "spontaneous" inoculation. Old animals from countries free from the disease are susceptible.

The *bile* is always rich in virulent bacteria, generally not nucleated.

The *aqueous humor* is but slightly so, while the *urine* has always proved innoxious.

The *amniotic fluid*, *serum* and *blood* are variably virulent.

The *muscular pulp* from a tumor is the most reliable means of producing the disease. The quantity required is variable. Inoculation will rarely succeed with a lancet. When it does there is generally a general fever in thirty to thirty-six hours, while the local lesion heals. By subcutaneous injection one drop may pro-

duce the local and general infection, but a less quantity (1-10 drop) causes no local lesion, while tumors may appear elsewhere; less still (1-15 drop) creates a general disturbance and confers immunity.

Virus injected directly into the veins in almost any quantity (under ten drops) causes a general fever only.

Into the *respiratory tract* the effect is the same, and the experiments of feeding virus with hay, oats, milk, etc., were all negative.

*Mechanism of the Infection.*—The infection is produced through the blood (including the respiratory apparatus) and the connective tissues, and results in an incomplete and curable disease, or in a complete disease with a fatal termination. The endothelium is evidently a barrier to the microbes, as they multiply in the blood and only produce tumors when a lesion is made for their exit. In the connective tissue the microbe finds a favorable field for pollution, and, after dissemination by the blood or lymphatics, any traumatic lesion favors the development of a secondary tumor.

Infection by the lungs must be regarded as the same as by the blood, and this is probably the most common mode of infection in the so-called spontaneous origin of the disease. When by accident, wound or otherwise the microbes, in sufficient quantity, gain the connective tissue, they develop rapidly and cause a tumor as the first symptom and we have the "essential anthrax" of Chabert; when, on the contrary, they have developed in the blood and by endothelial lesion find access into the connective tissue, we have the local trouble follow a general fever and the "symptomatic" form of the disease is present.

*Experimental proof that the microbe of bacterian anthrax is the exclusive agent of the virus.*—The virulent humors were innoxious after filtering in plaster-of-paris. The filter was virulent. Diluted humors after standing sixty hours were virulent only in the lower stratum, where microbes were found. After "essential anthrax" the blood is not virulent until microbes can be found in it.

*The granulations or brilliant spores found in the blood*

*or cultures are products of the vibrion and cause the disease.*—Cultures of this microbe in serum, beef and veal broth were negative. If tubes containing infected blood were charged with carbonic acid, the cultures could be continued to the third generation. Finally success was obtained in a mixture of chicken broth, glycerine and sulphate of iron, in which the bacteria can be bred indefinitely.

*Resistance of the microbe to causes of destruction:*

*Cold.*—Liquid containing virulent bacteria, frozen solid for forty-eight hours, retained its infecting property.

*Heat on fresh virus.*—It requires a temperature of 100° C. (212° F.) for at least twenty minutes to destroy the virulence of the microbes. Boiling water poured on the virus will *not*, however, produce the same result.

*On dried virus.*—When mixed with water it requires a temperature of 110° C. for six hours to destroy the virus; when placed in a tube and subjected to 110° C. it requires only two hours.

*Action of water or humidity.*—Dropped in water the dried virus sinks to the bottom and may lose its infecting power in 120 hours or may retain it for an indefinite period (exceeding three months).

*Putrefaction, anthrax and butyoric ferments.*—The agents of these do not interfere with the preservation of the virus.

*Chemical agents.*—These experiments were all made by placing the virus in contact with the substance for forty-eight hours and five drops of virus was then injected into a guinea pig. The reader will probably find the following tables useful not only in regard to blackleg, but also for other parasitic poisons.

*A.* Action of Solutions or Liquid Substances on the *Fresh Virus.*

| *Do not Destroy the Virulence.* | *Do Destroy the Virulence.* |
|---|---|
| Alcohol at 90 per cent. | Acid carbolic (watery solution), $\frac{2}{1000}$. |
| Spirits camphor. | " salicylic, $\frac{1}{1000}$. |
| Carbolized alcohol (saturated). | " boric, $\frac{1}{5}$. |
| Glycerine. | " nitric, $\frac{1}{200}$. |
| Ammonia. | " sulphuric, (diluted). |
| Acetate of ammonia. | " muriatic, $\frac{1}{2}$, |
| Sulphate " | " oxalic (saturated). |
| Sulphhydrate of ammonia. | Salicylated alcohol. |
| Carbonate " | Soda. |

Benzine.
Chloride of soda.
Quicklime.
Polysulph. lime, $\frac{1}{5}$.
Sulphate of iron, $\frac{1}{5}$.
" quinine, $\frac{1}{10}$.
Borate of soda, $\frac{1}{5}$.
*Hyposulph. of soda*, $\frac{1}{2}$.
Tannic acid, $\frac{1}{5}$.
Iodoform.
Silicate of potash, $\frac{1}{200}$.
Oxygenated water.
Chloride of zinc.
" manganese.
Turpentine.
Cazeneuve camphor (monochlor.)
Potassa, $\frac{1}{5}$.
Iodized water.
Salicylate of soda, $\frac{1}{5}$.
Permanganate of potash, $\frac{1}{20}$.
Sulphate of copper, $\frac{1}{5}$.
Nitrate of silver, $\frac{1}{1000}$.
Corrosive sublimate, $\frac{1}{1000}$.
Cazeneuve camphor (bichlor.)
Chloral, $\frac{2}{100}$.
Acetare aluminium, $\frac{1}{200}$.
Picric acid.
Naphthaline, $\frac{2}{100}$.
Benzoic acid, $\frac{2}{100}$.
Essence eucalyptus, $\frac{1}{800}$.
" thyme, $\frac{1}{800}$.

*B.* Action of Gases or Substances in a State of Vapor on the *Fresh Virus.*

| *Not Destroying Virulence.* | *Destroying Virulence.* |
|---|---|
| Ammonia. | Bromine. |
| Sulphurous acid. | Chlorine. |
| Chloroform. | Sulphate of carbon. |
| Sulphurated hydrogen. | Vapor of thyme. |
| Ozone. | " eucalyptus. |

*C.* Action of Liquid or Gaseous Substances on the *Dried Virus.*

| *Not Destroying Virulence.* | *Destroying Virulence.* |
|---|---|
| Oxalic acid. | Carbolic acid, $\frac{2}{100}$. |
| Permanganate of potash. | Salycylic " $\frac{1}{1000}$. |
| Soda. | Nitrate silver, $\frac{1}{1000}$. |
| Chlorine. | Sulphate of copper, $\frac{1}{5}$. |
| Sulph. carbon. | Muriatic acid, $\frac{1}{2}$. |
| Vapor of thyme. | Borac acid, $\frac{1}{5}$. |
| " eucalyptus. | Salicylated alcohol (saturated). |
| | Corrosive sublimate, $\frac{1}{2000}$. |
| | Bromine. |

After the use of thyme and eucalyptus the vibrion retain all their movements and normal appearance, but are innoxious.

As the tables show that it is much more difficult to destroy the dried than the fresh virus, disinfection should be carried out as soon as possible after the death of an animal from this disease.

Pregnant females infected with black quarter invariably communicate the disease to the fœtus, and if they recover, the offspring have acquired immunity.

The authors fill a large space with the comparison and differentation of the bacterian anthrax, the bacteridian anthrax (splenic fever), and the septicæmiæ, and evolve not only many interesting clinical, but very valuable biological facts.

*Preventive Inoculation.*

Immunity can be conferred by inoculating natural virus—

*A.*—In the connective tissue, if but a minimum quantity of microbes enter.

*B.*—In the connective tissue of the tail, where but little absorption takes place, but this method is also uncertain in its results.

*C.*—In the veins; 3-10 of a drop of fresh virus for a sheep, and 3, 5 to 10 drops for cattle.

To obtain the virus, inoculate a guinea-pig; take 2 parts of muscle from the black tumor and one part of water; filter first through linen and then through 2 or 3 layers of fine batiste; mix liquid thus prepared with 5 times its quantity of water. The jugular is carefully exposed by dissection and the injection made so as to avoid touching the walls of the vessel with the virus.

A detailed account of the mode of performing the operation is given, and should be consulted before attempting a series of operations.

*D.*—Injection in the respiratory tract can be made experimentally, but it is not of practical application.

*Immunity Conferred by Attenuated Virus.*

The virus can be attenuated—

1st.—*By the action of antiseptic substances*, but the effect is uncertain, and is as yet merely a laboratory fact.

2d.—*By successive cultures.* The virulence is often diminished after the fourth or fifth culture, but the amount can only be determined by experiments.

3d.—*By the action of heat on fresh virus.* A temperature of 65° C., prolonged for 15, 20, 30, 40 and 70 minutes, gives a virus of decreasing strength. Slight variations will, however, so alter the results that the attenuations cannot be depended upon.

4th.—*By action of heat on dried virus.* After diluting the dried virus (1 part) in water (2 parts), the preparation is placed in a stove and heated for seven hours.*

* The experience of the authors has shown that no appreciable effect is obtained below 65° C. 85° C. makes an attenuated virus which serves well for a second inoculation, but is still too strong to be safe with the smaller animals, or with very susceptible cattle. 100° C. produces an excellent first inoculation, and can be used safely even with guinea pigs. The first and second inoculations are made eight days apart.

The dried powder is again triturated and diluted in water 1 per cent.; of this one cubic centimeter is used for each inoculation. The authors now inoculate cattle at about two hands distance from the extremity of the tail. At the present time the cattle inoculated 17 months ago retain the immunity acquired by the inoculation.

In the last chapter, this careful and beautiful study of the laboratory is supported by the practical statistics of the inoculation of nearly a thousand cattle and sheep on farms in the south of France and in Algeria. These inoculations commenced in 1880, and continued through 1881–82. On infected farms and mountainous pastures not one of the inoculated animals died of blackleg, while the uninoculated belonging to the same proprietors or their neighbors and placed in the same surroundings, paid their regular tribute to this scourge of agriculture.

## CONFERENCE IN BROOKLYN, N. Y.

### PREVENTION OF CONTAGIOUS PLEURO PNEUMONIA.

Reported by W. H. PENDRY, D.V.S.

An interesting conference was held on the 9th of January, in the offices of the Health Department of Brooklyn, N. Y., for the purpose of discussing the question of the prevention of contagious pleuro-pneumonia, Health Commissioner J. H. Raymond, of Brooklyn, occupying the Chair. Among those present were: Hon. E. Brooks, of the State Board of Health; Professor J. Law, of the United States Treasury Cattle Commission; Dr. D. D. Whitney, of East Norwich, L. I.; Drs. C. C. Munsell and E. W. Martin, of the Department of Health in New York City; Dr. A. N. Bell, editor of the *Sanitarian;* Dr. G. V. De Hart, of the Health Department of Pleasantville, N. J.; Dr. A. Otterson, late Health Commissioner of Brooklyn; Veterinary Surgeons Drs. Peter Peters, of New York; J. W. Gadsden, of Philadelphia; L. McLean, L. V. Plageman, W. H. Pendry, R. McLean and L. T. Bell, of Brooklyn; Jos. Hopkins, of Wyoming, and W. B. Miller, of Camden, N. J.

The Chairman stated that invitations had been sent to representatives of every Board of Health in the State of New York who were said to be familiar with the subject, and opened the conference by reading the annual reports of Veterinary Inspector Dr. L. McLean, in which he called attention to the continued and increasing prevalence of contagious pleuro-pneumonia among the milch cows of that city (Brooklyn), and stated that, in his opinion, there was not another city in the Union in which the milk-producing stock was so affected with contagious pleuro-pneumonia. Speaking of the two remedial measures of prevention, viz., the slaughtering process and inoculation, he strongly advocated the latter remedy, so far as the City of Brooklyn was concerned. He mentioned several cases in which he had inoculated cows in stables in which pleuro-pneumonia was known to exist; and in others, where it had broken out, with the result, that those which he had inoculated had not been affected with the disease. He said, while he thus advocated the adoption of inoculation, in order to meet the local conditions in recently invaded districts and isolated cases, its extirpation could be more radically effected by the slaughtering process carried out in its entirety.

The Chairman having called for an expression of the opinions of the gentlemen present, upon the subject:

Professor J. Law said he trusted that, by an interchanging of ideas, they would be led to some tangible result. He conceded that Dr. McLean's views were right, whenever they could do no better. He had held, for many years, that an inoculated animal is protected just as a person is protected from small pox. He gave the views of inoculation for pleuro-pneumonia, as expressed at the Congress of Veterinary Surgeons held last year in Brussels, The disease bore a great resemblance, in one respect, to glanders in horses, and to consumption in men and animals. Glanders and tuberculosis would not affect to the same extent as contagious pleuro-pneumonia and the lung disease, but that made the lung disease all the more dangerous, because it was very liable to appear in a form not readily recognized. In dealing with these matters, simple inoculation or temporary measures were not sufficient. There was a necessity for continuous restraint in every

place in which the disease had broken out. When it is intended to stamp them out completely, the affected animals should have no destination other than to the slaughter-houses. He would destroy every beast they had, rather than permit the disease to spread, and would even destroy every building in which it had appeared. The Federal Government should appropriate a sum sufficient to pay liberally for the cattle that would be destroyed, say four-fifths of their value, or even more, thus enlisting the interest and support of the owners. A movement was now on foot for an international system of veterinary sanitary arrangements, and considering the frequent communications between the Old and New Worlds, this was badly needed.

The Chairman: "What is your opinion in reference to the effect of pleuro-pneumonia upon the meat and milk?"

Professor Law: "There is no doubt that it impairs the value of the milk and meat, as it becomes literally fevered meat. But no injurious effects from their use had been discovered. He almost wished there had been, for then the matter would have been quickly looked after."

Dr. J. W. Gadsden, of Philadelphia, said he proposed to read several extracts from well known veterinary authorities, who gave, as the only effective treatment for pleuro-pneumonia, the stamping out process. They had employed these means in Pennsylvania, with good result. They had liberally compensated the owners, and he believed that it was due to that fact, that they had been able to extirpate the disease in that State. They had no trouble in discovering at once, when and where the disease had appeared, as the owners immediately notified them, and asked to have their stock examined. They had traced many cases from Baltimore, showing that the danger lies in moving the cattle from one place to another. As to the milk, he should consider it very injurious, particularly if used without boiling. He, too, would wish that people were a little more affected by the use of the meat and milk; as then, perhaps, there would be less difficulty in securing the adoption of some effective remedy for the evil.

Dr. Hopkins, of Wyoming, thought that gentlemen in the East had no idea of the vast cattle interests that were at stake in

the West. He represented owners who had millions invested. In the West stamping out was the only treatment they would favor. Inoculation was only a palliative of the disease, and if this was to be followed in the East, or even in Brooklyn, no cattle from such places would ever be allowed to come West. The affected animals, and the whole herd in which they were found, should be at once destroyed, and the owners liberally treated with, so that there would be no occasion to be constantly watching them. It would be to their own interest to report all cases themselves. He was sure the disease could be stamped out in eighteen months, at a cost of not more than three million dollars. To talk of any measures by which to rid the country of pleuro-pneumonia, other than the stamping out process, was in his opinion a farce. He had conversed with gentlemen who stood high in the veterinary profession. Professor Liautard and others had informed him personally, that they were in favor of the stamping out process.

Mr. Williams, of Queens County, said that he was a believer in inoculation. He had his own stock inoculated with good results.

The Chairman reminded Mr. Williams that he was speaking about a local instance. They wanted to consider the matter from a national point of view.

Mr. Williams was of the opinion, that what would apply locally would also apply nationally.

Dr. A. Bell was sure that the milk and meat of animals suffering with pleuro-pneumonia was not a proper and healthy food, and believed that it should be made a criminal offence for any one to sell either.

Dr. L. McLean understood that they had met here as scientists, to discuss by what scientific means they could suppress pleuro-pneumonia. He certainly did not consider they were doing so, when gentlemen present advocated stamping out by slaughtering. He could not deny that that process would stamp out the disease: what would not slaughtering stamp out? He considered that we were past that age. It was inhuman, besides being a great waste of money. It would take twenty years

to disinfect such stables as those he had mentioned, and in which the disease had existed for so many years. It was quite true that an inoculated animal could carry the germ of the disease in its hide, but Brooklyn was so situated, that it would be an easy matter to isolate it. He considered that he had given good reasons why inoculation was the proper scientific treatment for such a place as that city. It was not so very long since Prof. Law had advocated inoculation.

Prof. Law would repeat that when you could get no other remedy, inoculate by all means.

Hon. E. Brooks said two theories had been advanced, and, as has been said, "when Doctor's disagree, who was to decide?" Inoculation had proved of great service in small-pox; was it not reasonable to suppose it would be of service in pleuro-pneumonia?

Prof. Law held that one was entirely different from the other, and entered into the reasons at considerable length.

Ex-Commissioner Dr. Otterson thought that the point of diagnosis was the thing to get at. All owners of cattle ought to be so educated in the matter as to be able at once to make a diagnosis of the first case occurring among their stock, and so have the trouble handled in its first stage. He was sure there were many cases reported to be pleuro-pneumonia that were not so, and he had been placed in that position himself. He had at one time lost several head of cattle, one after the other, and it was reported far and wide that the cattle on his farm were affected with pleuro-pneumonia. He at once sent Dr. McLean to inspect the stock, who reported that they were not so affected. The cause was discovered by them and removed. Science had cleared the matter up, and cut short the trouble.

Dr. Plageman, being asked by the Chairman for his views, said he had nothing to add to what had already been said. There were others present who had had far more experience with pleuro-pneumonia than he had. In answer to the question by the Chair, as to what were the qualifications required for a veterinary surgeon, he said there were none.

The Chairman—"Can any body practice as a veterinary surgeon?"

Dr. Plageman—"I believe there is no law against it."

A gentleman present here remarked that it was not so in all the States.

Dr. Hopkins said he had to meet a delegation of the Chicago Convention of Stockmen in Washington the next day, and he trusted that the conference would pass such resolutions as could be presented at the same time, and hoped that some one would be appointed to join the delegation there.

Prof. Law then proposed, and Dr. Peters seconded, the following resolutions, which were unanimously adopted:

"That this conference petition Congress to appropriate such sum as they shall deem fit to stamp out the contagious pleuro-pneumonia disease in the United States."

"That in order to attain this end they shall provide for the appointment of a sufficient number of veterinarians as experts to inspect all herds in infected districts; also to indemnify owners for all cattle slaughtered by official order, to stamp out the contagious pleuro-pneumonia, and for the cost of disinfection."

"That the Legislatures and Governors of infected States be called upon to co-operate with the United States in keeping a census of all cattle in infected districts; in preventing the movement of cattle without license; in quarantining infected herds; in slaughtering infected animals, and in disinfecting and other needful restrictions."

"That the United States shall, so far as it has the power, forbid the movement of cattle out of any infected state which will not adopt measures required to stamp out contagious pleuro-pneumonia."

Prof. Law, Hon. E. Brooks and Commissioner Raymond were appointed to submit the resolutions to Congress and the Governors of the States.

On motion, Commissioner Raymond and Dr. L. McLean were appointed a committee to proceed to Washington, and attend a meeting to be held there the following day.

After a vote of thanks to the Chair, the meeting adjourned.

## SPONTANEITY OF CONTAGIOUS DISEASES.

By Henry Stewart.

Hackensack, N. J., January, 1884.

*Editor Veterinary Review:*

My Dear Sir—Some time ago I promised to send you a short article, intended to meet some criticisms made by your correspondents upon some articles of mine in the *N. Y. Times.* I have been so occupied, and have been so closely studying this matter, and have had so many cases brought to my knowledge from widely separated localities, that I have put off writing up to the present. But recently another article of mine has attracted the attention of the Maryland Breeders' Association, who are engaged in procuring legislation in regard to contagious diseases, and has brought me into conflict with Dr. Ward, of Baltimore, (M.R.C.V.S.)

The subject is very important, you will readily perceive, for if the law only takes notice of actual cases of disease, and leaves the pestiferous places where the disease is bred, it must necessarily be as inoperative as would a law which compelled yellow fever or cholera patients to be secluded, and leave the filthy, open drains and all the foulness of a city unnoticed.

I live in a district where pleuro-pneumonia is rife. It has been all around me; so has fowl cholera, even next door to me, but I feel entirely safe, as I have done when in my professional capacity I have spent weeks in the midst of a pestilence. And I am quite sure that until a law that authorizes the oversight of all the so-called "hot beds of disease," and enforces sanitary measures as a precaution, is procured, the plague will never be wholly removed. I herewith send you the article I promised.

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Some remarks of mine upon the probability of the spontaneous origin of virulent contagious diseases, and generally of all that class of diseases which are believed to be due to the growth of virulent germs in the blood, have met with some rather severe criticisms in these columns. The weight of popular opinion in

regard to this subject, I may say, might have had some influence upon my belief, were it not that I see very many inconsistencies in the beliefs and statements of those who oppose my views, and also if I had not lived long enough to see many theories of this kind grow into settled convictions in spite of the fiercest opposition and contradiction. I well remember the sensation produced when that noteworthy book, entitled "Vestiges of the Natural History of Creation" appeared, and the strife among scientific (as well as religious) people when the theory of the spontaneous origin of life was announced. Then followed the germ theory; the investigations of Pasteur and others, the theories of Darwin, Huxley and other biologists, until opinion now is divided pretty evenly among scientific men as to whether life does really evolve itself from matter, and originates spontaneously, or is an actual creation by some miraculous and supreme power that is unknown and unknowable.

This question, however profound it may be, is related in the closest manner to the one under consideration. For if matter can form itself, by virtue of certain laws of attraction and growth, into germs that are endowed with a power of motion—as contraction and expansion, and as in the infusoria—then it is quite possible that higher, and indeed the very highest forms of life, including the mental faculties, may be produced by the operation of similar laws; for sense and thought are but the effects of the motion of certain nerves, acting in a somewhat similar manner to the movements by which the rotifiers are enable to whirl themselves about in their little field under the lenses of the microscope. Now does this view detract in any way from the infinite wisdom of that power we call the Creator, for it is as high a form of power that is required to make a law and subject all matter to its operation, as that necessary to mold matter separately into every form of life and give it sensation and sense.

All this is pertinent to the point at issue; for if a germ can be formed *ab origine*, it can also be formed *de novo;* and multiplication can go on indefinitely, not only by natural increase by generation, but also by formation under favorable conditions. But I do not go so far as this. The point I desire to make is simply

that so far as these virulent diseases are concerned, it is certain, and unavoidable, that their germs are widely distributed, as are those of the common moulds and mildews, the rusts and smuts of vegetation and the virus of cholera-morbus, yellow fever, typhoid fevers, small-pox and other contagious diseases of man; and chicken cholera, swine cholera, pleuro-pneumonia and anthrax fevers of cattle. We cannot doubt this to be a fact unless we can show that there is a special law by which these diseases of cattle are differentiated from similar diseases of mankind and plants. For we can show by numberless instances how infectious diseases occur in mankind through favoring causes for the development of germs already in existence and without any exposure to infection, and how a large number of persons in the closest contact possible with the virus escape the infection. Indeed, the fundamental theory of vaccination or inoculation is based upon this very fact that the blood may be brought into such a condition that the germs of the special disease cannot grow in it, however much it may be exposed to, and infected by them. Again, the precautions by which physicians fortify themselves against infection would always be useless and ineffective if it were not possible by such precautions to give the blood the power of rendering the inhaled infection harmless, while on the contrary it is the person who is exhausted, enervated by care and worry, or debilitated by any cause who becomes the early victim. Thus Prof. Law, than whom we have no higher authority in this respect, says of anthrax fever, that "its *development* (!) is determined (among other causes) by a condition of the system of the animal predisposing to the reception and growth of the poison * * * by overwork, impure air and unsuitable food or water, * * * sudden chills when the poison is present, as extreme variations in the temperature * * * and a still, close atmosphere."

In conclusion I would urge the following facts, viz.: that the contagion of this class of diseases, including pleuro-pneumonia, must necessarily be widely spread abroad; that the virus is able to exist under favorable circumstances for a long time; that it may and does remain dormant in the blood of animals, waiting for a train of circumstances favoring its development; and that

if these favoring circumstances do not occur, there is no outbreak of the disease.

Consequently the professional veterinarian, and others who are laboring with him for the welfare of the agricultural interests, should by every means in their power, not only encourage and enforce a thorough sanitary system in the management of farm animals, but warn the public of the danger to be apprehended from a neglect of these sanitary measures, and look themselves to such, with other preventatives, as the means of combating these diseases in conjunction with the more heroic one of the instant destruction of diseased animals. Then and then only can we hope to stamp out the disease, and when the fire, as it were, is extinguished, prevent spontaneous combustion in the future, by avoiding the conditions under which it may be developed.

## A CASE OF MENINGOCELE.

By M. E. KNOWLES, Student.

A bay gelding, 18 years old, was brought to the college for dissection, upon which the above was found.

Situated on the left of the median line; under the anterior portions of the great complexus and splenius muscles. Attached by a pedicle, to the superior face of the atlas; immediately over and surrounding a pseudo-foramen, the axis of which was slightly towards the left of the median line.

Its anterior limit was the anterior border of the atlas; posteriorly it was limited by the posterior border of the axis. Limited internally by the funicular portion of the ligamentum nuchæ, internally overlapping the greater portion of the great oblique muscle of the head.

In its growth it had displaced the great and small posterior straight muscles, and fibres of these were found covering the external and superior faces of the cyst.

Through the medium of areolar tissue it was quite intimately attached to the adjacent tissues.

Extirpated, and placed upon the table, it is found to be rather

testicular in shape; about six inches in length and weighing about three pounds.

On incision, the contents, yellow in color, thick and creamy in consistency, partly ran out. On examination I found it to be undergoing calcarious degeneration.

Near the opening of the now closed canal of the peduncle, was found a "bunch" of calcarious deposits, as large as an egg, but of irregular shape, though its portions were not intimately united.

Surrounding the closed canal of the peduncle, four rudimentary cysts were found, containing a substance analagous to that found in the parent cyst.

The walls of the parent cyst were well defined, and consisted of at least three layers; the internal, which simulated a serous membrane, which it undoubtedly was, for the peduncle was directly in communication with the dura matar.

The removal of this meningocele during life would have been a tedious operation, to say the least, and its situation probably rendered it an impossibility.

The evacuation of its contents might have been accomplished, but in either case death would undoubtedly have resulted from sympathetic, or possibly, direct inflammation of the meninges.

## EDITORIAL.

### SEMI-ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

In our last issue, referring to the importance of the formation of State Veterinary Societies, and to their union in joining with the oldest national association of the Union, we stated that we understood that the next meeting of the United States Veterinary Medical Association was to be held in Cincinnati. We were brought to that conclusion by the fact that a letter had been sent to the President of the Association urging this movement—a letter which had been signed by almost all the members of the Comitia Minora, in whose hands rest the choice of place of meet-

ing; and also from the fact that by authorization of the President a notice to that effect had been sent to some veterinarians of the West.

This action was so favorably received by members of the profession in the East, as well as from practitioners from Michigan, Ohio, and Illinois, that numerous promises of attendance and of applications for membership were made, and there was every prospect for a successful meeting.

We publish to-day the minutes of a meeting of the Comitia Minora, which was held lately in New York, by which it will be seen that a change was made in the selection of a place—which we very much regret—Boston having been decided by a very small majority to be the next place of meeting.

We took an active part in the first conclusion arrived at, and we cannot help considering the second as an error; and we sincerely hope that it will not have the bad effects which we tried to show at the Comitia Minora it might have.

The principal arguments raised against it were that the Association ought to be counselled in taking such an important step, involving such a radical change from previous custom; Eastern members might object to such an arrangement. Those in favor were, (1) the need of establishing better feelings in the ranks of the profession at once; (2) to take advantage of the stimulus to organization which already exists; (3) that numerous letters of encouragement and of adhesion were received; and (4) that many were looking upon the change as a new departure, by which the entire profession could but be benefited.

The vote was taken; Cincinnati will not be the rendezvous in March. Of course, it is difficult to obtain the opinions of all the gentlemen who belong to the Association, which are spread all over the country, before the day of the meeting, but we will be pleased to place the pages of the Review at the disposal of all members or intended candidates who may be desirous of expressing their opinion on the matter. It may not yet be too late. If the Association at large should direct the Comitia Minora to change the place of meeting from Boston to any other city in the West, it can yet do so, as we have no doubt that the President

would feel bound to call a meeting of the Comitia Minora before the notices are sent; and we are quite certain that a new vote will come to the relief of our western friends. It remains with the members of the Association to decide whether those who intend to join its ranks, and who know but little of its doings, shall be satisfied in making their application in writing to the meeting in March, or will do it personally, in being present as invited, in some one of the western cities. The result for them will be the same, of course, as they will always be obliged to wait till the next meeting for admission, but in the first case they will not be able to judge of the Association as well as in the second.

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## OHIO STATE VETERINARY MEDICAL ASSOCIATION.

We publish in full the reports of the annual meeting of the above named organization. It is with great pleasure that we give them a place in our pages, and we cannot but congratulate our colleagues of that great State in having so successfully realized what we consider one of the most advantageous steps in the history of veterinary medicine in the United States. We shall always be glad to hear from the Ohio Veterinary Association, and to receive from its members any publication they might see fit to send us.

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## JOURNAL OF COMPARATIVE MEDICINE AND SURGERY.

The first number of the fifth volume of the *Quarterly Journal of Comparative Medicine and Surgery* appears with the announcement of a change in the editorial staff, one of the gentlemen formerly composing it retiring for the purpose of attending to more pressing engagements, and making room for our friend and colleague, Mr. F. S. Billings, V. M. We welcome the new *Journal* and journalist, and sincerely wish it all possible success. We call it the "*new*" *Journal*, and feel authorized to apply the adjective and to consider it as new in the sense of veterinary journalism, from the fact that this is the first time in its history that a graduate, educated essentially as a veterinarian, has come to occupy the editorial chair. Recognizing as we all do, the

ability of Mr. Billings, his love for the profession, his ambition for its elevation, and his well nourished desire for the establishment of a national veterinary institution, we can look with anticipated assurance upon the pleasant and profitable pages which the *Journal* will hereafter lay before its readers.

## PATHOLOGICAL PHYSIOLOGY.

### UPON THE CULTURE OF THE MICROBE OF GLANDERS, AND UPON THE TRANSMISSION OF THE DISEASE BY THE LIQUIDS OF CULTURE.

By Messrs. Bouchard, Capitan and Charrier.

(*Continued from Page* 474.)

This series of experiments must remove any existing doubt upon the question of both the fact and the virulency of the liquid of the fifth culture of the matter from a nasal ulcer, an inoculation of this liquid having given rise in a first cat to a disease which proved fatal; the same disease transmitted to a second cat also having proved fatal; the disease of this last, inoculated to a third cat, being also followed by death in the same manner; a similar result being obtained in a guinea pig inoculated with the bloody serosity escaping from the nostrils of this third cat; and at last the glanderous nature of the disease communicated to the guinea-pig from the cats, and which had killed him, being proved in the most evident manner, by the effects of the inoculation of a donkey with the matter taken from a pulmonary abscess in the guinea-pig, and in less than ten days this donkey dying of acute glanders, with a peculiar eruption in his lungs, of the peculiar species of nodules, known formerly as *metastatic* abscess.

The report of this series of experiments is taken from a paper of no less than sixty observations, all of them showing the remarkable aptitude of the organism of the guinea-pig to serve as a medium of culture for the glanderous virus, whether it be inoculated in the natural state or in the state of purity obtained through successive cultures and carried to the eighth generation; a point at which the experiments were terminated. But it imports little

as to where the virus is obtained. Glanders produced in the guinea-pig by the inoculation of the cultures is absolutely the same in a chemical and anatomical point of view, with glanders produced in the same animal from glanderous products taken directly from the horse.

These experiments are sufficient, both as to their number and agreement with one another, to justify the conclusion that there exists in glanders a living element, isolable from the matter in which it exists, by means of its culture in an appropriate medium, where it appears in large quantities under the form of a movable baccillus, which is incontestably the instrument of the virulency of glanders, inasmuch as the drop taken from the liquid of the fifth, sixth, seventh, or eigth culture, is as capable by its introduction into a susceptible organism of giving rise to glanders as the natural virulent matter, taken directly from a glandered animal.

Your commission might be content in the presence of such evident demonstration with an expression of their acquiescence in the conclusions of Messrs. Bouchard, Capitan and Charrier. But we have thought that on such a subject, "quantity would not spoil quality," and your reporter has taken advantage of the means at his disposal for the verification, experimentaily of the results obtained by those gentlemen, who willingly accepted the offer to renew their experiments under the conditions which were submitted to them.

On the 20th of August, 1883, a horse and a mare were destroyed in their presence. These animals had all the external symptoms of glanders; gland discharge, with nasal chancres; and, as revealed at the *post mortem*, the special ulcerations of the pituitary membrane and pulmonary lesions, under the form of nodosities and tumors, though more developed in one subject than in the other.

There was no doubt as to the nature of the disease; it was acute glanders.

Vases for culture, ready prepared, immediately received the products obtained from the two animals; matter from the lymphatic glands and from the pulmonary abscesses; blood from the heart; and purulent discharge found upon the surface of the chancres.

The cultures were made every twenty-four hours, in an oven heated to 38 degrees, as follows:

The bouillon used was made of beef, heated at from 115 to 120 degrees, in a bath of chlorure of calcium. All the precautions indicated for the destruction by proper heat of all the germs of the vases, were taken. The sowing was then made for the subsequent cultures, with a drop taken, with a heated tube, in a prepared culture, and put into a vase containing the bouillon prepared for another culture.

In each vase thus sown, the liquid became cloudy after twenty-four hours, and the microscope revealed the fact that the cloudiness was due to the presence of moving organisms, of a round or elongated form.

These organisms belong to the order of the ærobics, for it is impossible to obtain their growth in tubes free from air.

They were easily rendered visible at the moment of using. To color them, the violet of methyle or other reagents, such as the blue of methylene, were employed. These reagents, and principally the last, has made them plainly visible in the tissues where they existed.

In some few of the cultures, the disposition in chapelets with variable grains was observed, and also ovoid organisms.

### INOCULATION OF TWO DONKEYS WITH LIQUIDS OF THE FIFTH AND SIXTH CULTURES.

*Donkey No.* 1, *with liquid of the fifth culture.*—Experiment conducted at Alfort, on the 30th of August.—Subcutaneous injection made behind the left shoulder.

Two days after, a painful swelling appears at the seat of inoculation, accompanied with general symptoms of extreme intensity; depression of the animal; extreme weakness; trembling; increase of temperature, rising above 41 degrees on the last day, and anorexia. September 4th, the animal drops and is unable to rise, and dies during the night of the same day, being the sixth after the inoculation. Evidence of the excessive activity of the inoculated virus.

The *autopsy*, made September 5th, shows in the lungs, the typical lesions of acute glanders. These organs were literally

stuffed with nodules of a yellowish white tint, the size of a hazel-nut, or of small nuts, projecting and giving to the surface of the lung a bosselated aspect, made more evident by the depression under atmospheric pressure, of the healthy structures of the surrounding pulmonary tissue.

These nodules gave to the touch well-marked sensations of compactness, and had a caseous consistency.

No effusion appeared in the pleura, pericardium or peritoneum, and no lesion appeared in the laryngeal, tracheal or bronchial mucous membrane.

There were two ulcerations upon the pituitary membrane in the left nasal fossa; a smaller one upon the middle of the septum; and another and larger, also upon the septum, but higher up. The lymphatic glands of the subglossal region were enlarged, and were the seat of serous infiltration. On the surface of the spleen there were seven nodules, one of which was quite large.

All these lesions being sufficiently characteristic of the special object in view, further investigation became unnecessary, especially in view of the dangers attending the work of the post-mortem in cases of such extreme activity as the subject under notice had developed.

*Donkey No. 2.—Inoculated with the liquid of the sixth culture.* This animal was inoculated on the same day, in the same manner and in the same place.

The local and general symptoms were about the same as those of the first case, but the disease was of longer continuance, by five days. Death took place in the night of the 9th of September, the post-mortem being made on the 10th. The pulmonary lesions were less marked than in the first animal. There were but about twenty small, compact nodules, surrounded by a hemorrhagic zone, and nothing appeared in the spleen or in the liver. There was infiltration of the aryteno-epiglottic folds, and an irregular ulceration, not deep, about three centimeters long and two in width, in the middle of the left arytenoid cartilage. In the nasal cavities were four well-marked chancres, on the left face of the septum, one of them being quite large. The entire

mucous membrane was highly vascular. A small abscess containing a caseous pus appeared at the point of inoculation.

These lesions are also sufficient to characterize glanders. The chancres of the larynx and of the nasal cavities cannot be ignored.

These experiments of control are, consequently, entirely confirmatory in their results of those of Messrs. Bouchard, Capitan and Charrier: *Glanders is a microbian disease.*

This conclusion, which may now be said to be definitively admitted, the result, as it is, of experiments many times repeated and always with the same results, reflects a most important light upon a question of the greatest interest in the domains of pathological anatomy and physiology, by giving to the most important lesions their real signification, and bringing their true evolution within the scope of our clear comprehension.

The old pathological anatomy, and by this I mean that of yesterday, was able only to observe certain facts, whose meaning continued unknown, from want of this great conception of the microbian nature of the disease which we possess to-day. It said: glanders is characterized anatomically by disseminated lesion, under the form of nodular tumors, abscesses or tubercles, according to its nature, in the lungs, the liver, the spleen, the testicles, etc. It is characterized, moreover, by ulcerative lesions scattered upon the membrane of the respiratory tract, from the nostrils to the bronchial divisions. It also showed lesions of the glands, corresponding with those of the teguments and of the parenchymatous structures, etc.

But why this dissemination of the lesions? Why the distributing power seated upon the respiratory membrane? Before the era of microbic discovery, upon which we have now entered, answers were given only by suppositions, and it must be admitted to the honor of the old observers, that at least one of these came very near the truth. It was that of the irritating thorn (*epine irritante*). This, probably, did not mean a substantial reality; it was rather a metaphor which was adopted by those who wanted to say that the trouble was like that which would result if at the seat of the lesions, if there were points of irritation which called

for disseminated inflammatory processes, and from which the modifications of culture followed.

This theory—we may say it to-day—was a presentiment of genius, but the irritating thorn, admitted by the hypothesis, is to-day a living reality. It is the microbe, or rather the thousands of microbes, which, concentrated in a given point of the parenchyma, or of the mucous membranes, give rise by their presence and their vital activity to the irritating action of which the expression is the formation all around them, of a fluxus and a consecutive inflammatory process. With this idea, the formation of the inflammatory nuclei, characteristic of the anatomical development of glanders, places itself under the great law of the commanding fluxus, or to better express it, under the law which regulates the connections of the organic network with the bodies which are foreign to it, and penetrate into it.

(*To be continued.*)

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## PREVENTIVE INOCULATION WITH CARBUNCULAR CULTURES ATTENUATED BY THE METHOD OF RAPID HEATINGS.

By M. Chauveau.

The author uses the process of double vaccination, introduced by Mr. Pasteur. He says, this is the most convenient way to operate. "Instead of heating in a single mass all the liquid called *vaccinal*, contained in each mattrass, I divided it in two equal parts, one being heated to + 80°, the other being kept as it was. This last, with its weak primitive attenuation, is in the best condition for the vaccination that Mr. Pasteur calls the second, the former, whose attenuation is completed by the heating at + 80° being used for the first vaccine."

The experiment was made upon ten sheep. After the first inoculation, none were apparently sick and none died. The second inoculation was postponed on acconnt of various circumstances, and was made only two months after the first. Nevertheless, it did not seem to disturb the animals any more. One, however, died afterwards of splenic apoplexy. Then the testing operation, the inoculation with very strong virus of a normal culture, was

made three weeks after the second vaccination, and renewed six days after, with very virulent blood, and repeated a third time always with anthrax blood, very rich in batonnets. The success was complete. Notwithstanding the accumulation of extremely strong virus, the nine living animals recovered perfectly. They possessed a perfect immunity.

These extremely favorable results of this experiment prove that the method of the rapid heatings can be applied with success to the practice of preventive inoculation, and deserves to be studied in this point of view.

If we wish to appreciate the practical value of a mode of preventive inoculation, we must look at it from the three-fold point of view, of facility of execution, inocuity of the operation, and the certainty of the results (the immunity) looked for.

In respect to the first consideration, it is certain that the method is of easy practice for all.

In relation to the inocuity, the facts reported, with many others not referred to, show that this method is surpassed by no other.

Upon the question of immunity, it can advantageously compare with any other process. This marked immunity, observed experimentally under various circumstances, may be referred to the great activity of the second liquid, called *vaccinal*, not heated, which greatly resembles the strong virus, and must produce a powerful impression upon the animal economy.—*Academie des Scienees.*

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## DETERMINATION OF THE CAUSES WHICH DIMINISH THE RECEPTIVITY OF SOME REGIONS OF THE ORGANISMS, FOR THE VIRUS OF SYMPTOMATIC ANTHRAX AND TRANSFORM A FATAL INTO A PREVENTIVE INOCULATION.

By M. M. Arloing, Cornevin and Thomas.

In inoculating cattle and sheep with the virus of symptomatic anthrax, the authors have observed, as Dr. Williams had done for the virus of contagious pleuro-pneumonia in cattle, that the microbes, inserted in the subcutaneous cellular tissue of the tail, did not give rise to the disorders which they produce in other regions of the body, and the superior part of the extremities. This

had been attributed to the density of the cellular tissue of that region, and the experiments of the authors tend to prove that to that cause must be added the low temperature of the extremity of the tail, comparatively to that of the rest of the body of the animal. Indeed, in heating or cooling the tails of animals in experiments, the effects of the inoculation were either increased or diminished. The conclusions arrived at were:

*First*—That the temperate seasons are the best for the practice of preventive inoculation.

*Second*—That it must not be done in summer.

*Third*—That if one is obliged to inoculate in the winter, the success of the operation will be increased by keeping the animals during the first days, in stables where the atmosphere is warm.—*Gazette Medicale.*

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## ORIGIN OF VACCINE.

Mr. Wahlomont, (of Brussels,) in a paper upon the origin of vaccine, concludes that:

*First.*—Equines and bovines and no other animals can be considered as vaccinogenous.

That neither the horse nor the cow can create of themselves, the former the horse-pox, the latter the cow-pox; that both, to furnish a vaccinal matter, must have first received the seed of it.

*Second.*—The original sowing of vaccine, in its relation to the horse or the cow is nothing else but variola, which upon being introduced into the organisms of these animals, undergoes an attenuation which modifies it into that which we call vaccine.

*Third.*—This attenuation is less in the horse than in the cow; horse-pox therefore, is nearer to variola than cow-pox.

*Fourth.*—The horse is a poor medium for the culture of vaccine matter. Animal vaccination requires germs attenuated to a higher degree than those that can be found in the horse.

*Fifth.*—Variolic impregnation or artificial vaccination in the horse, by inoculation, or intra cutaneous injection, seems to be susceptible of development in the cow without external manipulation. Immunity must be the consequence of this impregnation. —*Gazette Medicale.*

# EXTRACTS FROM FOREIGN JOURNALS.

## CANCROID OF THE GLANS PENIS IN THE HORSE—AMPUTATION OF THE ORGAN BY THE ELASTIC LIGATURE.

A tumor having the external character of a large cancroid had developed upon the head and free portion of the penis of a small gelding, 15 years old. This growth had produced a paraphymosis, complicated with œdema of the sheath. Micturition was greatly impeded in consequence of the double pressure upon the urethra by the neoplasm and the œdema of the sheath. The animal was losing flesh and was brought to the school of Toulouse for treatment. Considering that the cancroid was part of the penis, it was decided to amputate the organ, and the elastic ligature was chosen as the best means of operation.

The animal being thrown on the left side, and the right hind leg secured as for castration, a metalic catheter, fifteen centimeters in length and one centimeter in diameter, was introduced in the urethra and kept in place by an assistant while the ligature was applied. This catheter allowed micturition to take place notwithstanding the circular pressure of the ligature, as it carried at the extremity which was in the urethra, an olivar dilatation which prevented it from falling off. It had also on its outside extremity a small plate which withheld it from slipping too far back in the urethra. Within eleven days, after some trifling complications, which soon subsided, the fore part of the penis beyond the ligature sloughed away, and in a month after a radical cure was obtained.—*Annales de Belgique.*

## A DEEP PENETRATING WOUND OF THE PERINEUM.

By M. Jacotin.

An eleven-year-old horse had placed one of his fore feet upon the teeth of a fork. On raising the foot the extremity of the handle was brought against the abdominal wall towards the posterior part, and a little to the right of the sheath, and by the force of the contact and the pressure and through the struggles of

the animal the handle of the fork, turned upwards and backwards, penetrated the perineum, somewhat to the right, in the subcutaneous connective tissue, between the skin and the insertion of the gracilis muscle, and made its exit below the anus. It thus formed a fistulous tract with two openings and a median portion. The superior opening was oval in shape, with its antero-posterior axis quite well defined, and situated immediately below the sheath. The superior opening, situated below the anus, was narrow in its middle, and turned downwards and inward. Its edges were ragged. The middle portion was straight. The parts were swollen, inflamed, infiltrated, and emphysematous with a bloody, foaming discharge issuing from the lower opening. Locomotion was difficult and painful. Symptoms of general disturbance were mild, the appetite good, pulse slightly increased, and temperature almost normal. Treatment was by injections of phenicated solutions, continued irrigations of the parts, and subsequently dressings of tincture of aloes and Villate's solution. Recovery took place in twenty days.—*Archives Veterinaires.*

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## FRACTURE OF PATELLA IN THE HORSE.

By Mr. Andriew.

A light grey gelding, twelve years old, received from another horse a kick in the left stifle region. At first sight the leg seemed paralyzed, the animal being unable to rest his foot upon the ground, and the movements of flexion and extension appearing to be impossible. Exactly on a level with the middle of the patella appeared a wound through which the finger could be readily introduced, and through which escaped a serous, bloody liquid mixed with synovia. Introducing the finger into the wound, a fracture of the patella could be felt, the bone being shattered into three pieces, making spherical segments of about an equal size by a division which starting from the superior border, runs down to the center of the bone and then divides in two, one reaching to the outer and the other to the inner border, constituting an important condition, by which ultimate recovery becomes reduced to little more than a possibility, inasmuch as one of the

superior fragments was kept in place by the internal, and the inferior by the median patellar ligament. The bone being thus divided was, owing to the impossibility of moving it from the tibia, kept in place by the femoro-patellar capsula, and a sufficient amount of immobility secured to permit the formation of a callus.

Still, notwithstanding this favorable condition, the prognosis was rendered doubtful by apprehension of the possibility of arthritis.

Treatment was, however, attempted. Continued irrigation was directed over the joint, and in eight days the animal began to rest his foot on the ground. Two weeks after he could be exercised slowly; in a month he was able to resume slow work, and but a slight lameness remained at the end of two months, which will probably disappear, as the absorption of the callus proceeds. —*Archives Veterinaires.*

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## INTERMITTENT COLICS CAUSED BY AN EPIPLOCELE, WHICH BECAME IRREDUCIBLE AFTER CASTRATION—DEATH.

By M. Bonnigal.

A four-year-old colt was castrated by a gelder, in the standing posture by the process of uncovered testicle. The operation seemed so far successful that a week had elapsed after the recovery when the first colics appeared. At intervals during the following five months, the attacks appeared, almost always occurring while at work, or after drinking, but never in so severe a form as to require treatment and readily subsiding. One evening, however, they became so severe that Mr. B. was called. When he saw the animal, the attack had continued abont five hours, and he was in such a condition that an unfavorable prognosis was at once announced.

The animal was in *dorsal decubitus*; the abdomen *much tympanized*; the skin covered with a cold sweat; respiration slow deep and labored; the animal remaining insensible to all excitement; the pulse imperceptible, and the application of the finger to the eye failed te provoke the displacement of the membrana

nictitans. No treatment was attempted: the animal was dying.

What were the causes of death? The animal being castrated, hernia was not supposed, notwithstanding the position assumed, by the animal.

In exploring the scrotal region, I felt that the cicatrix of castration of the left side was drawn upwards and kept in that position by an adhesion coming from the abdomen; and it was thought that this was due to the presence upon the testicular cord of a small champignon, about the size of a small egg.

On the post-mortem, this adhesion proved to be due to the extremity of the great omentum which was much congested and terminated by an enlargement or true tumor, formed of its blood vessels, and which becoming fibrous had united to the cicatrix of the scrotum. The superior opening of the inguinal canal was enlarged by the straining of the omentum, which passing forward, first under funicular shape, had spread afterwards until it reached the great curvature of the stomach.

In this case the animal has been castrated by the process of clams.—*Presse Veterinaire.*

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## A CASE OF ACEPHALOCYST IN THE BRAIN OF A BEAR.

By M. Lestre.

A bear two years old presented for some time the following symptoms: increasing irregularity of locomotion, that function becoming regular ataxia, that is, a marked weakness of the hind-quarters; a heavy irregular walk; the fore legs being less active than the hinder, dragging on the ground, and moved by a circular motion of circumduction. The animal then became blind with amaurosis of first the right, then the left eye; was deaf and idiotic, losing control of the sphincters; not looking for his food and by degrees becoming entirely paralyzed. He was at length destroyed, and a post-mortem examination was made. The investigations were principally directed to the nervous system.

In opening the cranium, the brain at once protruded, as if pushed out. It was soft and fluctuating, and the substance was reduced to a thin and irregular layer, forming the wall of the

two lateral ventricles enormously distended, and filled with a serous liquid, in quantity about three-eighths of a liter, or some twenty ounces. As the fluid was removed through an opening in the left ventricle, a thick transparent membrane, easily torn, though elastic, appeared. This was evidently a hydatid, which had developed in the left hemisphere, which it had enlarged at the expense of the nervous substance, and the pressure of which had even acted upon the cranial box, which was found considerably thinned down. The corpora striata, horns of Ammon, optic layers, the corpora quadrigemina and cerebral peduncles were also much compressed and deformed; the optic nerves, and especially the right one, atrophied.

The right hemisphere was only the seat of a simple hydrops of the ventricle, which had pressed, deformed and thinned its walls. This was the consequence of the development of the hydatid of the other ventricle. As to the nature of this parasite, it is an echinococcus; the heads or portions of head of tænia could not be found in the liquid, nor at the surface of the membrane. But the thickness of this and the folds of its internal face are sufficient to recognize the variety of altered or undeveloped echinococcus called acephalocyst.—*Journal de Zootechnie.*

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## UPON THE USE OF CHLOROHYDRATE OF MORPHIA AND THE EXTRACT OF BELLADONNA IN THE TREATMENT OF TETANUS IN SOLIPEDS.

By Dr. Santo Stazzi.

In the *Clinica Veterinaria* of October, 1884, the author reports a number of cases of this disease where the treatment consisted mainly of the subcutaneous injection of a solution of chlorhydrate of morphia in various doses. Thirty centigrams and upwards in distilled water, with the administration of fifteen grammes of extract of belladonna, stimulating friction, and the application of a blister of cantharides over the vertebral column from the withers to the croup completed the treatment.

Out of ten cases thus treated seven made a recovery.

1st case.—Of traumatic tetanus; recovered in 22 days.

2d Case.—A stallion, with tetanus of castration, also recovered after a much longer time. He received 80 centigrammes of morphia.

3d Case.—Had such a severe attack that he died in a few days.

4th Case.—A mule; was cured in 15 days.

5th Case.—A donkey was in convalescence towards the 12th day.

6th Case.—Another; made a complete recovery in 25 days.

7th Case.—This animal died the 7th day.

8th Case.—A stallion, seven years old, was considered out of danger the 16th day.

9th Case.—Death occurred in this animal on the sixth day.

10th Case.—This case was more persistent than the others; convalescence not showing itselve before the 40th day.—*Clinica Veterinaria.*

## SOCIETY MEETINGS.

### NEW YORK STATE VETERINARY ASSOCIATION.

The regular monthly meeeting of the New York State Veterinary Society was held at the American Veterinary College on Tuesday evening, January 8th, 1884, at 8 o'clock, with the President, Dr. Liautard, in the Chair.

Owing to the absence of the Secretary it was moved and seconded that Dr. Foote act as Secretary *pro tem.* Carried.

Dr. Burden moved, and it was seconded, that the calling of the roll and reading of the minutes of the previous meeting be omitted, as the minute book was not at hand. Carried.

Dr. Critcherson read a paper on "Vomition in the Horse," citing several interesting cases which had come under his observation, as follows:

*Mr. President and Gentlemen:*

The subject which I shall present to you this evening for your consideration and discussion is "Vomition in the Horse."

"The act of forcibly expelling the contents of the stomach

through the œsophagus in response to direct disturbance of the brain, or from reflex irritation," although witnessed in the human race as an accompanying symptom of many disordered conditions, is symptomatic of none, while in the equine race it is said to occur only as a symptom of a grave lesion, some authorities going so far as to assert that "it only takes place at the time of, and as symptomatic rupture either of the stomach, diaphraghm or colon; that, in cases of gastritis arising from whatsoever cause, attempts at vomition may be witnessed, but the act itself is not accomplished."

"It has been noticed to take place in cattle suffering from indigestion and parturient apoplexy."

It is said that "it may take place when the stomach is distended with food which is undergoing fermentation." In considering the anatomical structure of the stomach it seems to me that the greater the distention, either by food or gases, the more constricted will be the œsophageal orifice, and hence the less chance of the ingesta being returned. Why the act should be a sequelæ of rupture of the colon or diaphragm I cannot understand, but think it might follow partial rupture of the stomach, especially if paralysis of the œsophagus existed, providing the rupture took place at the lesser curvature of the organ, and involved the muscular fibers which act as a sphincter to the distal end of the œsophagus. But I should think that a rupture would be more apt to occur at the greater curvature of the organ and be followed by the escape of its contents into the abdominal cavity.

"Constriction of the pyloric orifice is also mentioned as a condition which might cause vomition." Also "Jabot," which is a dilated condition of some portion of the œsophagus.

Physiologically considered, it is said that the act is rendered difficult because of the nonsusceptibility to nauseants. Although the susceptibility may be slight, I have certainly seen well marked nauseant effects from the administration of chloral and of aloes.

The following interesting cases, which were witnessed not only by myself, but also by several other gentlemen, go to show that the act can be accomplished, and the recovery be rapid and complete:

Case No 1.—Bay gelding, 7 years of age, 16 hands high, and weighing about 1,050 lbs., used for delivery purposes in the grocery business. Was admitted to the hospital October 13th, at 8.30 p. m., manifesting great pain, and unless kept constantly moving, would endeavor to lay down. Abdomen somewhat distended. When placed in a loose stall, at once lay down, although doing so cautiously, and rolled upon his back, where he lay striking and pawing the air with his anterior extremities. The posterior extremities were flexed at the hocks and drawn up to the abdomen. Occasionally he would carry his head around to the left side (his right side lay against the side of the stall), and look anxiously at his flank.

*History.*—On September 24th this same animal was admitted to the hospital suffering with acute laminitis and congestion of the lungs. Was treated for such and discharged on the 29th. Resumed work on the first of October, and continued without interruption till the 13th, when he was given his breakfast (which consisted of oats) at 5 o'clock a. m. Before being fed at noon he was allowed to eat several ears of green corn. Upon being driven in the afternoon it was noticed that he was not inclined to trot, and while standing his head was held low, but otherwise no pain was shown. Toward evening colicky pains were shown, upon which he was taken to the stable, the harness removed, and walking exercise given for an hour. As his condition did not improve, the owner became alarmed, and, notwithstanding the heavy shower of rain which was then falling, brought him to the hospital.

*Diagnosis.*—Flatulent colic. The animal's constant motion prevented anything being done to relieve his external condition. During a short internal of rest, while the animal was lying upon his sternum, a drench composed of tr. opi., ℥ ii; aetheris sulph., ℥ jj ss.; spts. ammonii aromat., ℥ j; olei lini., ℥ x, was given. At this time there was no protrusion of the right hypochondriac region denoting distention of the large intestine by flatus. When standing the back was arched, and the abdominal muscles in a condition of clonic spasms, while the respirations being thoracic were increased and very forcible. The process of fermentation

and the production of flatus at this time was, I think, confined to the anterior portion of the alimentary canal. In about an hour the violence of the attack greatly diminished, but the distention of the abdomen was more marked. Accordingly the colon was punctured and a large amount of gas allowed to escape. An enema of warm water and soap with the addition of olei terebenthinæ, ℥i was given. The rectum at this time was empty. Friction of the entire body was then employed and followed by the application of blankets. About 11 o'clock he was noticed to lie down with considerable force, and while resting upon his sternum he would flex his head and neck and then fully extending the same, an eructation of gas would take place. Noticing that there was considerable retching accompanying these movements, I watched closely and saw that the act of vomition was actually performed. The discharge came from the mouth and nostrils, and it had the characteristic gastric odor. At this time the temperature was 105°, pulse, about 90, and almost imperceptible, respiration increased and labored, eyes protruding, nostrils widely dilated, and mucous membranes highly injected.

Oct. 14th. Temperature 101½°; pulse 80, small and weak; respiration 40. General condition much better, although the eyes were partially closed and the countenance indicated great weakness.

The abnormal muscles had a contracted, rigid appearance, the nostrils dilated and the respiration was thoracic. Auscultation revealed increased respiratory murmur over both lungs. Percussion gave dullness over the posterior and inferior portion of the left lung. Heart's action; weak and irregular. Abdominal irritation was shown throughout the day, to combat which anodynes and alcoholic stimulants were given. Very little nourishment, consisting of light, easily digested food, was partaken of. This treatment was continued till the 18th. At that time, the condition being normal, and the appetite fully restored he was exercised and on the following day, (19th) was discharged, with directions to exercise, but not to put to work till the following Monday, (22d).

Case No. 2.—Bay gelding, about six years old, weighing about 1,200 lbs, admitted at 8:30 p.m., on Oct. 30th.

*History.*—Stopped work on that day at 2 o'clock. At 6 o'clock manifested colicky pains, which increased until the owner became alarmed and sent him to the hospital. He had been fed on a mixture of corn and oats. Was very tympanitic, with constant eructations of gas. Was restless and when put into a stall, laid down and rolled upon his back, which seemed to give some relief.

*Diagnosis.*—Flatulent colic.

The colon was punctured, and drench of turpentine and oil given. An enema was also given, but it was instantly expelled, as the rectum was empty and spasmodically contracted. The respirations were short and thoracic, nostrils dilated, pulse full and hard. Was very restless and being amurotic would walk around the stall until he came in contact with the sides or was brought to a standstill in a corner. These movements were frequently interrupted by the animal lying down, rolling upon his back, and getting up again, only to continue his aimless walk. The regurgitation of gas continued. Was punctured the second time. The body became bathed in a profuse perspiration and symptoms of great nausea were present. On lying down these symptoms were aggravated, the head and neck flexed and then extended. On attempting to rise he showed symptoms of choking.

Gave one cough, which was immediately followed by the expulsion of nearly a gallon of a whitish, sour-smelling fluid, from both mouth and nostrils, consisting of corn and oats partially digested.

On examining the mass, an intestinal parasite (lumbricoid) was discovered. It measured ten inches in length. After the act had been accomplished, the animal laid down, with anterior extremities flexed at the knees, and the posterior ones fully extended. The anus was everted.

At this time the temperature was 101½°; pulse, 84; respiration, 36. All visible mucous membranes of a purple color. Gave carbo animalis and calcis chloride in pill form. Became somewhat easier. As a chill was setting in, a stimulant was given, and friction applied to the entire body.

Oct. 31.—Temperature, 102°; pulse, 50. Is weak, but manifests no pain. Functions normal. Was given alcoholic stimulants throughout the day, with a small amount of soft feed, which he ate readily. Towards evening the temperature rose to 103°.

Nov. 1.—Temperature, 101°; pulse, 45. Was sent home with directions to feed lightly, and not to work till the following Monday (Nov. 5th), which was done, and at 1 o'clock Monday afternoon the animal was brought back, with the history that he had been put to work that morning, but about noon had colicky pains. Condition when admitted: Temperature, 101°; pulse, 42; respiration, 24. Had emaciated greatly since first seen. Showed no pain during the afternoon, but stood in one position, with frequent regurgitations of gas. About 5 o'clock the temperature rose to 102°; pulse, 50; respiration abdominal and spasmodic, with a well-marked to-and-fro movement of the anus.

Nov. 6.—Temperature, $101\frac{1}{5}$°; pulse, 36; respiration, still accelerated, but not as forcible. Eats and drinks well.

Nov. 7.—Was exercised for an hour with no disturbance of functions, which had become normal.

Nov. 8.—Discharged.

P. S.—Since writing the above I have inquired as to the present condition of both animals. The first animal has been performing its usual work without interruption up to the present time. The second was put to work, but in a short time suffered from an attack of pneumonia, from which he recovered, and is now performing his daily work.

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In the course of the discussion which followed, several cases were reported in which vomition had occurred, and recovery ensued.

Dr. L. MacLean raised the question, "Could vomition occur by the way of the mouth?" to which the essayist answered in the affirmative.

Dr. Liautard considered that, while recoveries after vomition were among the rare exceptions, veterinarians were never justified in positively prognosing death.

Mr. Loblein, a student of the American Veterinary College, related a case of a mare whose teeth he had been called to rasp. After the operation, and upon being fed a quart of oats, the animal began retching, and soon vomited freely. The owner stated that she invariable did so after eating oats, and Mr. Loblein proved the truth of the assertion by inquiries among those who were acquainted with the animal. Hay and other food she retained, and he could discover no cause for this peculiar vomition.

Dr. Critcherson asked why vomition should, as a rule, only follow flatulent colic, not accompanying other intestinal disorders.

Dr. Robertson explained it by the expansion of the stomach and the folds of the mucous membrane at the cardiac extremity of the œsophagus, thereby dilating that orifice.

Dr. MacLean claimed that it is no easy matter to diagnose flatulence of the stomach; that there was no symptom to guide one, to which Dr. Coates responded, that in such cases one will notice enlargement along the inferior wall of the abdomen, without any bulging of the flank, but later perhaps the gas would extend to the larger intestines and dilate the flank. If the gas was in the colon, which lies along the inferior abdominal cavity, it would as well be manifested in the flank.

Dr. L. MacLean asserted that a partial rupture, a laceration of the mucous membrane of the stomach, was the usual cause of vomition, and that when the rupture was complete vomition would not occur.

Dr. Liautard said he could not understand why the mucous membrane should give way first in distension of the stomach. He should think that the muscular coat would give way first, and, consequently, complete fracture occur if any, and then the contractions of the stomach, while throwing a quantity of the contents into the thoracic cavity, would also throw considerable into the œsophagus, and out. In the cases he had held post mortems on he found the mucus membranes less extensively ruptured than the muscular coat.

After closing the discussion, the essayist received a vote of thanks, and the society went into executive session.

The next meeting will be held at the American Veterinary

College, Tuesday evening, February 12, 1884, for which Dr. Liautard has kindly volunteered to prepare a paper.

H. T. FOOTE,
Sec. *pro tem.*

## OHIO VETERINARY MEDICAL ASSOCIATION.

The Ohio State Veterinary Medical Association held its first annual meeting in the parlors of the American House, at Cleveland, on the 8th inst. The meeting was called to order at two (2) P. M., by the President W. C. Fair, V.S., Cleveland, who addressed the meeting at some length, giving a history of the Association since its organization at Columbus in September last, also the object of the present meeting, etc., then called on the Secretary, J. M. Waddel, Columbus, for the financial report, which was read and adopted.

The Secretary was then instructed to call the roll, and the following gentlemen answered to their names, viz: W. C. Fair, V.S., Cleveland; J. V. Newton, V.S., Toledo; T. B. Cotton, V.S., Mount Vernon; J. M. Waddel, V.S., Columbus; J. S. Butler, V.S., Piqua; T. B. Hillock, V.S., Columbus; L. B. Chase, V.S., Berlin; W. F. Derr, V.S., Wooster; W. E. Wright, V.S., Delaware; W. A. Labror, V. S., Xenia; G. W. Bowler, M.D., V.S., Cincinnati; W. R. Howe, V.S., Dayton; F. Z. Groff, V.S., Massillon; L. D. Blanchard, V.S., Canton; W. Huntsberger, V.S., East Union; J. Jeannin, D.V.S., Canal Dover.

The minutes of the previous meeting was then read and approved.

The next in order of business was the election of officers for the ensuing year, as follows: W. C. Fair, Cleveland, President; J. V. Newton, Toledo; 1st Vice-President; T. B. Cotton, Mount Vernon, 2d Vice-President; W. A. Labror, Xenia, 3d Vice-President; J. M. Waddel, Columbus, Recording Secretary; J. S. Butler, Piqua, Corresponding Secretary; T. B. Hillock, Columbus, Treasurer. Board of Censors—W. R. Howe, Dayton; L. B. Chase, Berlin; G. F. Derr, Wooster.

The following gentlemen was then proposed for membership: J. Crotty, M.R.C.V.S., Cleveland; A. H. Tanner, V.S., Ashtabula; J. H. Miller, V.S., Seville; R. W. Whitehead, V.S., Youngstown; J. E. Taylor, V.S., Toledo; J. Youkerman, V.S., and D. P. Youkerman, V.S., Cleveland; D. Hank, Orville; C. A. Garrison, Houston; L. C. Spidell, Newark; G. O. Harlan, Tremont, and were referred to the Board of Censors. All were admitted to membership except Hank, Garrison, Spidell and Harlan, who, being non-graduates, were requested to present themselves for examination before the Board of Censors at the next meeting of the Association.

The visiting gentlemen were, L. Vandervoot, V.S., Trenton, Canada; A. Hummel, D.V.S., Cleveland; J. Martin, D.V.S., Cleveland, and others.

The Corresponding Secretary then read letters of regret from Prof. A. H. Baker, V.S., President Illinois State Veterinary Medical Association, Chicago; Thomas Wright, V.S., President Iowa State Veterinary Association, Davenport, Iowa; T. E. Daniels, Esq., of the *U. S. Veterinary Journal*, and others. Also the resignation of T. J. Martin V.S., of Harrodsburg, Kentucky, as one of the Board of Censors, he having left the State, which was accepted.

T. B. Cotton, V.S., Mount Vernon, was then called upon to read an essay on "Veterinary Dentistry." The paper was an exhaustive one and brought forth an animated discussion.

The essayest took the ground that carious supernumerary teeth were frequently the causes of ophthalmia, and in some cases resulted in the loss of vision, and related numerous cases, and presented several specimens of teeth to support his theory. But notwithstanding these evidences, he was opposed by the majority of those present, prominent among whom were Messrs. Fair, Howe, Whitehead, Newton, Youkerman, etc., who related cases to support their objections. The essayist also asserted, that injuries to the buccal membrane from sharp and

projecting molars often produced the fœtid breath, which is always attributed by some to indigestion, or the retention of food between the teeth.

He also said carious teeth was occasionally the cause of glanders, which was opposed, except in an indirect way, from nasal gleet, the result of carious teeth. He also thought it might cause periodic ophthalmia. Dr. Newton thought that it might be caused by some parasite. But the majority concurred with Dr. Fair, that it was due to forced growth in young animals, and hereditary predisposition, together with exciting causes.

Dr. Cotton said diseased teeth brought on paralysis, and related a case in a pig that was affected with the above disease, and upon making an examination found it due to the teeth. He therefore extracted thirteen (13) deciduous teeth, and the animal made a speedy recovery without any medical treatment. He also related two or three cases in cattle, that died from the effects of carious teeth. W. F. Derr, V.S., Wooster, presented a supernumerary tooth three (3) inches long, which he extracted from a five year old horse.

Dr. Bowler, of Cincinnati, being desirous to leave for home, was called upon to address the meeting, which he did in a few well chosen remarks. He thought great benefits might be derived from the meetings of the different State Associations, viz: In doing away with the petty jealousies heretofore existing in the profession, and in raising the professional status of its members. Was pleased to be present at this meeting, having been unable to be present at the two former meetings, but would try and and attend all of them he possibly could in the future.

He then closed with a few remarks on elephant castration (being veterinary surgeon to the Cincinnati Zoological Gardens, had made the wild animals a special study.)

He said the operation had never been performed successfully, owing to the testicles lying in the sub-lumbar region, and the animal's susceptibility to peritonitis (especially the African species). Most authors thought it could not be done successfully, owing to the above causes. But he differed with them, and concurred with Dr. Fleming, that it might be done with success, and thought Mr. P. T. Barnum would yet consent to let him operate, but would pick an Indian elephant to operate on.

The thanks of the meeting was then tendered Dr. Bowler, which he responded to, and retired.

The discussion was again resumed on Dr. Cotton's paper, and several other points of interest brought forward.

Dr. Fair, Cleveland, then introduced the subject of "Tuberculosis," and stated his opinion of the cause, etc., of the disease. Thought *in-breeding* was the most prominent cause, and cited several cases which came under his observation both in animals and human beings.

Thought the milk of tuberculous animals was the most frequent cause of lung troubles in young children, and had seen several cases where it had been clearly traced to infected milk. He also thought that the flesh of tuberculous animals, when not in an emaciated condition and properly cooked, was harmless for food. Dr. Newton endorsed the idea, but Dr. Howe opposed, on the ground that tuberculous matter was found in the muscular tissue.

Dr. Fair thought tuberculous matter was only found when the animal was emaciated, and in the latter stages of the disease. Dr. Whitehead related a very interesting case in a cow he was called upon to treat. Was called to deliver her of a partially decomposed fœtus, which he did after some trouble, and the cow having died some time after, held a post-mortem, and found the uterus literally covered with tuberculous nodules, as was nearly every organ of the body; also found the muscular tissue very pale in color. The point, as to which was most infectious, the milk or flesh of tuberculous animals, was then discussed. The majority decided that the milk was, especially if the udder was affected. The meeting then adjourned an hour for supper.

### Evening Session.

The evening session began at 7 P. M., with President Dr. Fair in the chair. The next place of meeting was decided to be at Toledo in June next. The ques-

tion of revising the by-laws was then discussed, and a committee for that purpose was then formed, consisting of the following gentlemen: Howe, Blanchard, Whitehead, Youkerman, Hillock and Colton; who were requested to report at the next meeting.

Dr. Hillock, of Columbus, was then called upon to read a communication on a case of "diaphragmatic hernia," which came under his notice. When first called upon to see the animal, he was showing well-marked symptoms of acute indigestion, viz.—eructation of gases, tympany, pulse and respiration accelerated, and perspiring freely, which was followed soon after by sitting on the haunches. He treated it for the above troubles, and under the treatment pursued, he apparently recovered so that on the morning of the fifth (5th) day was eating, respiration, pulse and temperature normal. But at 4 P. M. the same day was taken suddenly ill again, perspiring profusely, and sitting on the haunches, which finally ended in the death of the animal the same evening. Upon holding a post-mortem, twenty feet of the small intestines were found in the chest, through a hernia in the middle portion of the diaphragm, and came to the conclusion that the hernia either existed prior to his illness altogether, from the severe exertion the animal had undergone, or shortly after the sickness began. This paper brought forth an animated discussion.

The question as to how much morphia, hypodermically, an animal could stand, was then brought up. Dr. Hillock, the essayist, said he had experimented on a case, and gave 35 grains at one injection at night, and found the animal eating hay in the morning. Others thought they got too much effect from 3 to 5 grain doses.

The virtues of opium and chloroform were then discussed as to their effects in tympanitis, and also the astringency or non-astringency of opium in diarrhœa. The majority decided it was non-astringent, but dessicant, and soother of the nervous system.

The operation of "paracentesis abdominis" in tympanitis was then warmly discussed. Dr. Newton related a case in a horse of his own, which took sick on the road (while out to see a patient) with flatulent colic, which he punctured seven times, and on both sides, with success. Dr. Waddel related a case in a mule where he punctured eight times, and on both sides, with success. Nearly all present related cases of a similar character, and all except two or three were in favor of the operation, and decided it did no harm when done early and with a proper instrument, except occasionally the formation of an abscess, which Dr. Howe thought might be prevented by clipping the hair, and making an incision through the skin with the scalpel before inserting the trocar and cannula. Dr. Crotty asked which portion of the intestines they punctured, and it was decided to be the colon.

Dr. Fair then related an interesting case of "tetanus" in a Canadian pony, which came under his observation, in which there was not only trismus but almost complete rigidity of the muscular system. The case, under appropriate treatment, was recovering nicely, when the groom took the liberty to lead it out by the halter, when the symptoms returned with greater severity, and ended in the death of the animal. The mode of death in such cases was then discussed. Dr. Fair thought the case in question died from asphyxia. Dr. Youkerman thought it might have been effusion into ventricles of the brain, and Dr. Garrison that it might have been due to an ante mortem clot of a fibrinous character, but the majority concurred with Dr. Fair that it was generally, if not always, due to paralysis of diaphragm, inter-costal and abdominal muscles.

Dr. Newton then introduced the subject of "parturient apoplexy," and related his mode of treatment and success of such. A lively disscussion followed, in which nearly every one took an active part, relating cases they had treated, and their successes or non-successes. Dr. Howe related a case where he introduced medicines into the stomach through a hollow probang, after the power of deglutition was lost, and saved the patient. Drs. Crotty and Butler related cases seen prior to parturition. Dr. Derr, of Wooster, volunteered a paper on "parturient apoplexy," and Dr. Whitehead one on "tuberculosis" for next meeting. The

essayists were then tendered a vote of thanks, after which the meeting adjourned, to meet again at Toledo in June, of which due notice will be given.

J. S. BUTLER, *Cor. Secretary.*

## COMITIA MINORA OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

A special meeting of the Comita Minora of the United States Veterinary Medical Association was held at the American Veterinary College, Wednesday, January 23d, at 2:15 p. m.

Members present were: President W. B. E. Miller, and Drs. Liautard, L. McLean, Coates, Burden and Michener.

Absent: Drs. Robertson, Lockhart, Stickney and Hoskins.

The objects of the meeting were stated by the President. His remarks were supplemented by those of Dr. Liautard, who spoke of the advisability of holding the next meeeting of the Association at some Western city, probably Cincinnati. This, the speaker said, would enable the veterinary surgeons of the West to become acquainted with the working of the Association and possibly induce some to become members of the same, quite a number having already signified a desire to join the Association.

A communication was then read by the Secretary from Dr. Hoskins, in which the writer urged that the next meeting be held in Cincinnati. Dr. McLean asked for information concerning the power of the Comitia Minora to change the place of meeting, and stated that he was of the opinion that any such action on the part of the Comitia Minora might not be favorably received by some members of the Association.

Dr. Liautard then read Art. I. of the By-Laws, showing the power of the Comitia Minora to decide the place and hour of meeting.

A general and spirited discussion followed, concerning the place to hold the March meeting. Dr. Burden thought a quorum would not be present if the meeting was held in the West. Dr. Michener spoke of the disadvantage of being kept so long from professional duties as a meeting in the West would occasion.

Dr. McLean thought it best to consider the matter of holding a meeting in some of the western cities, after the semi-annual meeting in Boston, at which time the opinion of the entire Association could be heard. Drs. Coates and Liautard thought that the annual meeting ought to be held in New York.

By invitation, Dr. Corlies, who was present throughout, urged as a reason for changing the places of meeting that there was a general impression extant that this Association appeared to be, at least, a factor of the American Veterinary College. He thought by going to some of the Western States the Association would prove itself entirely independent of the American Veterinary College.

Dr. Liautard strongly urged the propriety of calling the spring meeting in Cincinnati, and restated his reasons, *i.e.*, to bring to our midst a number of practitioners throughout the West.

The President, Dr. Miller, thought it prudent to use our best judgment concerning the action about to be taken, but seemed to prefer Pittsburgh as a place of meeting.

Drs. McLean and Michener spoke in favor of having the spring meeting in Boston, and that we there decide upon having the annual meeting at some Western point. After further discussion it was moved by Dr. Michener and seconded by Dr. McLean, that the semi-annual meeting be held in Boston. Carried. Drs. McLean, Burden and Michener voting in the affirmative, Drs. Liautard and Coates in the negative.

The Comitia Minora then adjourned.

C. B. MICHENER,
*Secretary.*

## NEWS AND SUNDRIES.

CATTLE EXPORT IN CANADA.—The export of cattle from Montreal has increased from 2,880 head in 1876 to 50,365 in 1883, while during the same period the export of sheep has risen from 2,686 head to 102,835.

TRICHINOSIS IN ILLINOIS.—Several cases of trichinosis have appeared in a German boarding-house at Bloomington, Ill. The disease was caused by eating raw sausage made from a hog raised in the place.—*Med. Record.*

AGE IN BREEDING.—The Kerry cattle in their bleak, Northern home, with scanty fare, do not breed until six or seven years old. When brought to milder climates and better fed they will breed at three years of age.—*Am. Cultivator.*

SCARLET FEVER FROM MILK.—A Scotch dairyman was recently convicted of selling milk which had stood in the room in which a child was ill with scarlet fever. The milk absorbed the poison, and seventeen persons were infected with the disease, four of whom died.—*Am. Cultivator.*

BACILLUS OF JEQUIRITY.—The *Medical and Surgical Reporter* states that M. L. DeWecker (*Comptes Rendas*) shows that the infusion of the seed of the jequirity contains a bacillus which, if applied to the human eye, produces purulent ophthalmia. This is the first instance of the transmission of an infectious disease by a plant.

REMOVAL.—The New York Post Graduate Medical School, on account of lack of room in their old quarters, and the desire to combine—beside teaching—the usual clinical instruction, will remove to a larger building in 20th street, near 2nd avenue. In the past year sixteen thousand patients were utilized and treated, and 140 physicians matriculated.

PRECOCIOUS COW.—Jersey cows breed at an early age. Mr. Jacob Vernon, of Independence, Mo., owns a Jersey heifer that gave birth to a calf before she was 11 months old, and when the

calf was born the mother was yet sucking her dam, never having been weaned. So states the St. Louis *Midland Farmer.*

PLEURO-PNEUMONIA.—Three new cases of pleuro-pneumonia were recently discovered near West Chester, Penn. Thus far the disease has been confined to three dairy herds. All infected animals are promptly appraised, condemned, killed and paid for by the State. The disease was introduced there by cows purchased at Baltimore.—*P. Farmer.*

A COSTLY MEDICINE.—The most costly pharmaceutical preparation in the market at present is without doubt the ergotinine prepared by the manufacturing chemists Gehe & Co., of Dresden, and containing the active principle of ergot of rye. It costs two hundred marks a gram, or something more than three dollars a grain. This is about twenty-one thousand dollars a pound avoirdupois, a price, in comparison with which, gold is "dirt cheap."—*Coll. & Cl. Record.*

APPLICATION OF TINCTURE OF IODINE.—Dr. Louis Fitzpatrick has found, after many trials, the local application of tincture of iodine to exert a well-marked influence in checking the growth of styes. This is by far preferable to the nitrate of silver, which makes an unsightly mark, and often fails in its object. The early use of the iodine acts as a prompt abortive. To apply it the lids should be held apart by the thumb and index finger of the left hand, while the iodine is painted over the inflamed papilla with a fine camel-hair pencil. The lids should not be allowed to come in contact until the part touched is dry. A few such applications in the twenty-four hours are sufficient.—*Am. Cultivator.*

CONTAGIOUS CATTLE DISEASES.—Last week a committee, recently chosen by the cattle breeders of the West, met at Washington with the Congressional Committees on Agriculture and the United States Cattle Commission, to devise some way of preventing the spread of contagious diseases of cattle, especially pleuro-pneumonia. It was finally decided to ask Congress to pass a law looking to that end, as it has been found that State

legislation cannot stamp out the disease. The legislation proposed is to make the shipment of cattle known to be diseased a penal offence; to establish a Cattle Bureau in the Department of Agriculture; to increase the power of the Commissioner of Agriculture; to provide funds for an elaborate investigation of diseased cattle, and to provide an appropriation for the purchase of diseased cattle that they may be destroyed. The appropriation to be asked for the first year will probably amount to $500,000, though a smaller sum may be determined upon.—*Country Gentleman.*

A Faithful Dog.—A Newfoundland dog kept guard over a bag of flour left by its drunken owner in Fairmount Park, Philadelphia, during the recent cold weather, until he was chilled into insensibility. Policemen tried to coax or drive him away, but to no purpose, and no one could get near the bag. After the faithful animal had succumbed to the frost he was carried to the guard house, and there carefully tended and resuscitated.

Swine Importation.—The Dominion Council has ordered that swine imported for breeding purposes, from the Western States, shall remain in quarantine at Point Edward, twenty-one days. They are also to be accompanied by a certificate that they are for breeding purposes and that there is no disease among swine in the locality whence they are exported.—*Am. Cultivator.*

The Value of Vaccination against Anthrax.—A commission consisting of Professors Maggi, G. Sormani, and E. Perroncito, and Dr. Nosotti, was appointed to investigate the prophylactic value of vaccination with the cultivated anthrax fluid by the method of Pasteur. They experimented with calves, heifers and lambs. Their conclusions are as follows (*British Medical Journal*): 1. Pasteur's method of carbuncular vaccination is prophylactic of carbuncle in the bovine race. The six vaccinated animals received no harm from repeated injection of carbuncular blood, while the four unvaccinated had high fever and great local swelling. 2. The heifers virgin to carbuncular injection, subjected to inoculation of blood and carbuncular virus, presented febrile reaction, but did not die; the immunity which

the two first heifers of control, the malady caused by the injection of carbuncular blood having ceased, acquired in presence of repeated injection in the second experiment, would seem to show that the morbid process was really carbuncular in nature. 3. Vaccination with attenuated lymph (No. 1 Pasteur), although repeated, caused no general or local reaction. This allows us to suppose that its action is so slight as to justify the attempt, already successfully made by Perroncito, to omit the first vaccination, and thus gain valuable time. 4. After using the stronger lymph (No. 2 Pasteur), its action should be verified by observing the temperature for a few days. It is reasonable to suppose that the preventive effect is limited to those animals in which a general reaction is developed. If there be no reaction, therefore, the vaccination must be repeated. 5. Cool weather is best for the vaccination; in the heat of summer, the occurrence of septicæmia is more to be feared. 6. The microscopic examination of the vaccine liquid prior to its use is necessary to prove the absence of bacteria of putrefaction, which, while they might destroy the prophylactic action of the vaccine for carbuncle, if injected, might easily give rise to disastrous consequences.—*Med. Record.*

## EXCHANGES, ETC., RECEIVED.

FOREIGN.—Repertorium der Thierheilkunde, Revue fur Thierheilkunde und Thierzucht, Archiv fur Wissenchaftliche und Praktische Thierheilkunde, Gazette Medicale, Revue Scientifique, Veterinarian, Veterinary Journal, Clinica Veterninaria, Press Véterinaire, Echo Veterinaire, Archives Veterinaries, Recueil de Medicine Veterinaire, Comptes Rendus des Academies, Annales de Brussels.

HOME.—Medical Record, New York Medical Journal. Archives of Medicine, National Live Stock Journal, Breeders' Gazette, Turf, Field and Farm, American Cultivator, American Agriculturist, Country Gentleman, Journal of Comparative Medicine and Surgery.

JOURNALS.—Ohio Farmer, Prairie Farmer, Home Farm, Chicago Horseman, Journal of Agriculture, The Polyclinic.

COMMUNICATIONS.—W. H. Pendry, D.V.S.; M. E. Knowles, W. Critcherson, D.V.S.; H. T. Foote, M.D., D.V.S.; J. S. Butler, V.S.; C. B. Michener, D.V.S.